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CONTENTS

EDITORIAL DEPARTMENT:

The South Carolina Pediatric Society Organized 275

ORIGINAL ARTICLES:

A Roentgen Study of the Cranium and Accessory Sinuses, by W. Frank Ashmore, M. D., Greenville, S. C. ---- 276

The Use of Dakins Solution in Civil Practice, With Report of Cases, by John R. Boling, M. D., Columbia, S. C. ---- 284

Case Report by James S. Fouche, M. D., Columbia, S. C. ---- 288

Observations on the Etiology and Treatment of Enteroptosis, by D. E. Walker, M. D., Rock Hill, S. C. ---- 290

Injuries to the Spinal Cord; a Plea For Early Operation, by G. T. Tyler, M. D., Greenville, S. C. ---- 292

Uteral Stricture, by T. M. Davis, M. D., Greenville, S. C. ---- 295

SOCIETY REPORTS ---- 300

BOOK REVIEWS ---- 302

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EDITORIAL

THE SOUTH CAROLINA PEDIATRIC SOCIETY ORGANIZED

At the last State Association meeting seven of the doctors, especially interested in Pediatrics, met together and decided to organize a South Carolina Pediatric Society and constituted themselves, as charter members, an executive committee to draw up organization plans, secure new members, formulate a future policy and arrange for a midwinter meeting to complete the organization.

The membership stands as follows:

Charter members: J. E. Watson, Anderson; R. M. Pollitzer and W. M. Rhett, of Charleston; Wm. Weston and W. P. Cornell, of Columbia; S. G. Glover, of Greenville; E. A. Hines, of Seneca; H. A. Mood, of Sumter; D. L. Smith, of Spartanburg; F. K. Rhodes, of Florence; M. W. Beach, of Charleston.

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Officers: President, W. P. Cornell; vice president, J. E. Watson; secretary-treasurer, E. A. Hines.

The main objects of the society are:

1st. Self information in all matters pertaining to Pediatrics.

2nd. Passing on this information to the medical profession of the state so that they will become more interested in Pediatrics.

3rd. Educate the laity along lines which will lead to the prevention and lowering of infant morbity and mortality

As a means to this end the executive committee has adopted the following:

At the mid-winter meeting the society will select one or two topics of most interest and value to the profession as a whole, and elect a committee or committees to prepare a thorough paper bringing the subject up to date. This paper will be submitted to the Pediatric Society for its vote of approval and, if endorsed, will then be read at the State Association meeting as the Pediatric Society's paper.

Each member of the society will be privileged and requested to give the committee any data, points, or case histories which he deems of a special value or interest to the topic, so that it may be included in the finished paper.

The committee will have ample time to get individual opinions of leading Pediatricians at a distance and to search the latest literature.

Any paper so prepared, and coming as the voice of the Pediatric Society and not as any individual's opinion, should carry weight and influence for the guidance of the general practitioner.

The executive committee feels that the Pediatric Society can be made of real value to the profession and laity and hopes to take a leading part in questions relating to any phase of child welfare that may arise in the state.

Wm. P. Cornell, President.

ORIGINAL ARTICLES

A ROENTGEN STUDY OF THE CRANIUM AND ACCESSORY SINUSES

By W. Frank Ashmore, M. D., Greenville, S. C.

I will take up first, the size, thickness and shape of the normal skull.

Even normally the dimensions of the skull are very variable. In the first place the size of the skull is dependent upon the size of the brain. The volume of the brain and the capacity of the skull bear a constant relation to each other in that as has been determined, the volume of the brain is about ten per cent less than that of the skull capacity. The weight of the brain varying normally within considerable limits, explains therefore the essential differences in the skull capacity. Vierordt's table gives 1,000 to 1,800 grams as weight of the brain in adults. Hence one may consider 1,400 grams as an average brain weight and 1,540 cubic centimeters as an average skull capacity. The size of the brain and the skull is, on the average, greater in men than in women. It increases in general with the length of the body, but small persons have relatively larger skulls than

(Read at the meeting of the Greenville County Medical Society, August 1, 1921.)

tall ones. Aso the race of the individual shows itself, in a certain measure, in the size of the skull.

For clinical purposes the determination of the skull capacity is important. Up to the present the largest horizontal circumference of the head determined by the tape measure has usually served as a measure of the skull capacity. With the help of empirically arranged tables the calculation of the skull capacity is determined from the circumference. Always in this case the uncertainty as to the thickness of the soft tissue outside the skull and the uncertainty as to the thickness of the skull become a troublesome source of error. Apart from variations in the thickness of separate skull regions, the average thickness of the skull of different adults varies between three and eight millimeters. The age of the individual, the sex, and general bone construction, as well as race, appear to influence its thickness.

The Roentgen picture permits the thickness of the soft tissues as well as the thickness of the cranial wall to be determined, and offers accordingly the possibility of correcting the capacity of the skull as obtained by cephalometric methods. The shape of the normal skull is influenced by inherited factors, namely, the characteristics of the race and family of the individual; and in addition it is affected by external influences. The racial factors manifest themselves in such a characteristic manner in the shape of the skull, that this is utilized as one of the most important anthropologic points in the differentiation of race. Family characteristics also find their expression in the shape of the skull. Indeed the similarity in the physiognomy of families depend in a large part upon unanimity in the shape of the cranial skeleton. Among the external influences upon which the shape of the skull depends, those occurring

FIGURE No. 1
Normal cranium and accessory sinuses, with scelotic mastoid, and normal sella tursica.

during intrauterine life and during parturition play an important part; also the habitual position of both the head and body during the first years of life.

Ranke found in measurements of cranial capacity that it was greater among city dwellers than among country people. According to Lomer the day laborer shows the smallest skull measurements, while those of peasants are strikingly large, larger, in fact, than those of hand workers, merchants and officials. In investigations concerning the dependence of the shape of the head of the new born upon the shape of the head of its parents, Stern has found that fixed relations exist only between the infant and its mother. The same author found a relationship between small and short heads on one hand and a narrow pelvis on the other. Further it appeared remarkable to him that the very short headed women produced a far greater percentage of female children than the very long headed ones.

Reuter sought to convey the thought that there is some relation between growth and cortical areas, so that people with long limbs have long heads and those with long bodies short heads.

The consideration of the shape of the skull is of practical importance with regard to cranio-cerebral topography. There exist definite relations between the length and height of the skull on the one hand, and site of cerebral fissure on the other. The occipital type of brain corresponds to the long, flat skull, which means that the fissure of Rolando lies here oblique and quite posterior; in the short, high skulls the frontopetal type of brain is present, meaning that the fissure of Rolando lies quite far for-

FIGURE No. 2 ..
Shows the sella otherwise normal except for a connecting bridge of bone between anterior and posterial clinoid processes. I make it a rule where I find this condition to do the cervical spine.

ward and more nearly approaches the perpendicular.

Roentgenography is of special value in locating on the skull the approximate position of the brain fissue, the importance of which grows daily owing to the increase in frequency of operative interference. The Roentgen picture of the skull facilitates the discovery of such points which serve as landmarks in cranio-cerebral topography. Braun refers to the fact that the relations given by Froriep can be directly demonstrated with the help of a saggital Roentgen picture of the skull. I add that the Roentgen picture permits the certain course of the artery furrows and venous canals to be determined, and in this way renders it possible to avoid their injury in operative procedure.

Roentgen pictures would also be very instructive in the presentation of the topographic relations of the interior of the brain to the skull. Since the skull represents the part of the skeleton which, from an anthropologic standpoint, deserves the greatest dignity, it is thus readily understood that exact methods for measurements of it should exist in very great numbers. The consideration of race peculiarities is not unimportant from a practical medical standpoint. Sometimes the differentiation of racial peculiarities, and deformities from pathological changes, is difficult. Further, abnormal sutures should be thought of, as they occur in a divided squama occipitalis (os inca), or in a divided zygomatic bone, or in a divided frontal bone (metophistic suture) —such abnormal sutures can be confused with fractures. The application of craniology to clinical medicine should be close. The connection between pathology and race peculiarities of the skull seems, according to some authors, to consist in the fact that the peculiarities of race can be traced back to morbid changes.

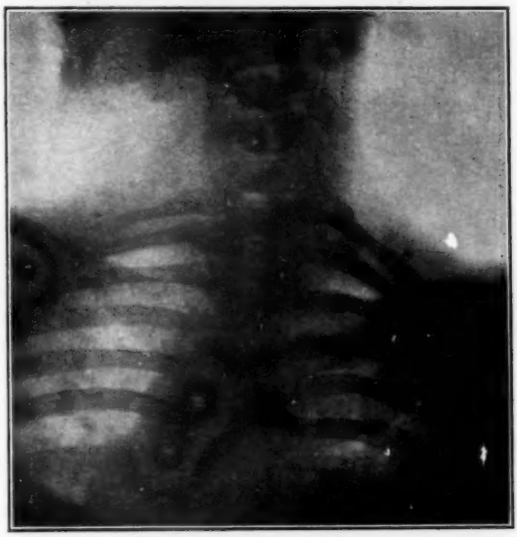

FIGURE No. 2 B

Shows the wisdom of such a procedure. Note in Figure 2 B the bilateral seventh cervical ribs which clears up the cause for a "rheumatic" condition. Case referred by Dr. A. White, Greenville, S. C.

Bilateral seventh cervical ribs mentioned in Figure 2 A.

Anomalies in Shape and Size of the Skull in Consequence of Disturbances in Its Development.

The various kinds of skull anomalies comprising this group show as a common characteristic deviations from the normal in size and shape. In this group of abnormalities, the skull structure plays an insignificant part. The skull is too small or two large, asymetric, disproportionate, or completely deformed. These deformities occur through disturbances in the normal development of the skull. For the understanding of skull deformities it is indispensable to know its normal development, and the efficiency of the factors influencing its shape and size under both normal and pathologic conditions. The skull during embryonic development exhibits in part a cartilaginous and in part a primitive membranaceous shell. The skull base and the facial skeleton are originally cartilagenous and the cranium membranaceous. Later a great number of bone areas appear in the cartilaginous part as well as in the connective tissue portion, namely, several points of ossification for each segment of the skull. With the growth of these areas of bone the cartilaginous and the connective tissue ground substance disappear more and more, so that finally only narrow bands of cartilage and connective tissue are left. These correspond to the so-called sutures of the skull. Certain basal sutures are already closed in the new-born, and the remainder ossify during the first few months or years of extra uterine life. The sutures of the vault, on the other hand, remain open for a long time. Normally they do not disappear for years

FIGURE No. 3
Widening of the sella produced by a tumor at or near its entrance, (probably gumma). History: Male, age 29, farmer, referred by Dr. J. W. Jervey, Greenville, S. C. Total blindness within three months after the onset, choked disc (bilateral), severe migraine, vertigo, explosive vomiting, spinal fluid three plus Wassermann. Compare sella with Figure 1.

FIGURE No. 4
Case of a girl six years old. Referred by Dr. J. W. Jervey, Greenville, S. C. History: An obscure mastoiditis with no clinical symptoms whatever, except that of a long continued temperature at times, appearing septic. Diagnosis confirmed by operation. Compare with mastoid Figure 1.

after the conclusion of the period of growth of the rest of the body.

The peculiarity of the origin of the skeleton of the head from two different kinds of tissue, connective and cartilaginous, permits it to be understood that disturbances of growth and ossification do not affect the entire skull, but sometimes the dome alone, and in other cases only the base. Furthermore, one sees why, in the same disease, the separate sections of the skull show dis-

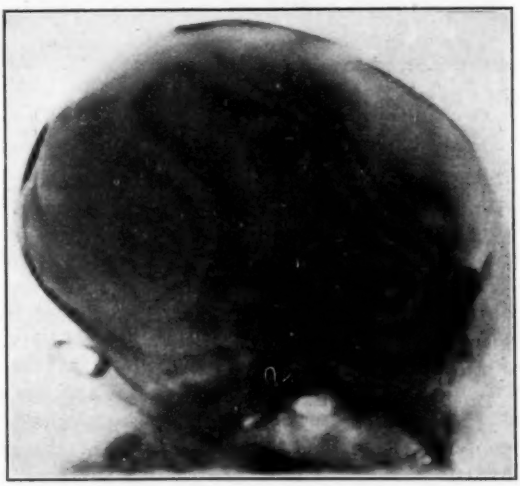

FIGURE No. 5
Shows congenital defect in the absence of the nose. Note the two structures of the cranium, membranaceous and cartilagenous substances as spoken of in paper. Infant a few days old. Referred by Dr. E. W. Carpenter, Greenville, S. C.

similar disturbances, as, for instance, the skull base and the facial skeleton; so far as anomalies of their development are concerned, show features analogous to the originally cartilaginous parts of the rest of the skeleton, while the changes in the vault appear practically analogous to those in the collar bone, for example. The causes of disturbances in development are diverse in kind. Just as the normal development of the shape and size is dependent on various factors, so the diversity of the factors; (5) the anomalies produced by systemic diseases of the skeleton, such as the characteristic skull shape in micromegale dysostosis, cleidocranialis, in myxedema and mongolism in rickets, in dwarfs and giants.

Malformations of the Skull.

Among the malformations of the skull should be mentioned congenital defects, the cleft formations, the fusion formations, and the double formations. The defects of the skull vault and base often

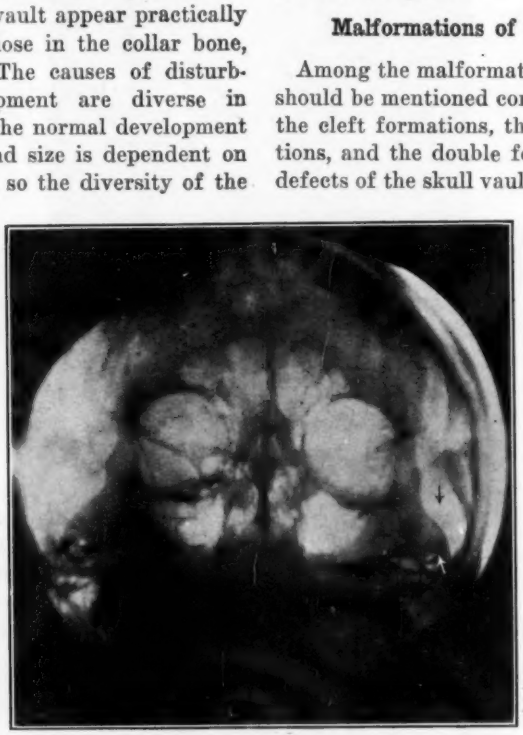

FIGURE No. 6
Case of a young married woman. Referred by Dr. A. White, Greenville, S. C. History: A severe migraine extending over a long period with nausea and extreme nervousness. This plate shows a small tumor of the brain (denoted by arrows) in the left temporal region. A similar case was reported by Dr. Ariail W. George, of Boston, in the Journal of Roentgenology, January, 1916, page 18.

factors influencing development assert themselves also under pathologic conditions.

Accordingly deformities of the skull may be divided in the following way: (1) The malformation of the skull; (2) the skull anomalies produced through chances of skull content, microcephalic, megalocephalic, hydrocephalic; (3) the skull deformities produced by premature suture synostosis (ceraniostenosis); (4) those produced by external afford portals of exit for the skull content (hernia cerebri). The site of brain hernias is extremely variable. By means of the terms hernia occipitalis, sincipitalis, orbitalis, nasalis, pharyngens, the place of exit and site of the hernia are sufficiently described as being in the median line of the occipital bone, at the root of the nose, inner canthus of orbit, nasal cavity and mouth.

In addition to the defects mentioned, there is a series of congenital gaps in

the skull, knowledge of which is of practical value for the sake of differentiation from traumatisms or inflammation, tumor, senile atrophy, cranial pressure or rickets. The defects under discussion are due either to embryonical pressure, atrophy (in consequence of amnionotic adhesions), or widened emissary vessels, in which latter case is in most instances a matter of widely dilated emisaria parietalia or the place of exit of a so-called sinuscele. Almost all of the skull defects have a circular shape margin.

Third, the obtaining of positive information relative to the appearance of the sutures, obliteration, widening, presence of supernumerary bones.

Fourth, the determination of the thickness and density of the bone in general, and the variation, if present, of the two halves of the skull.

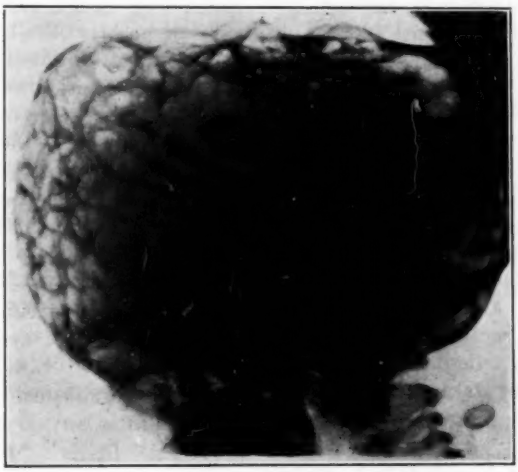

FIGURE No. 7
Patient referred by Dr. W. H. Nardin, Anderson, S. C. This is a case of extreme convolution, pressure atrophy. This should not be confused with a sarcomatous infiltration of the skull.

The Roentenographic examination of the hydrocephalic skull permits:

First, an instructive presentation of the size and shape of the cranial skeleton, and if repeated pictures are taken, one is able to note the changes which have taken place.

Second, a definite conception of the general shape and the delicate but important details of the skull base, especially the appearance of the sella tersica. The features of the latter bear a close relationship to some of the clinical symptoms which may be present, as for example, in obesity, the sella is frequently larger than it should be, and this may appear as a uniform enlargement of all of its diameters, or as a flat, dish-shaped widening of its entrance.

Fifth, the diagnosis of the condition of the inner surface of the skull as to the presence or absence of convolutional pressure atrophy.

X-Ray Laboratory, Jervey-Jordan Building, Greenville, S. C.

THE USE OF DAKINS SOLUTION IN CIVIL PRACTICE, WITH REPORT OF CASES.

By John R. Boling, M. D., Columbia, S. C.

It is not my idea nor hope in this paper to show you anything new in the use of Dakin's solution, but to impress upon you the importance and possibilities of it in your everyday practice. It is often thought of as one of the many useful things of the war whose usefulness ended with the ending of war wounds. This idea is entirely erronious, however. It is true that it was worked out then and used to a great advantage. At the beginning of the war we were very familiar with asepsis but had not had enough infected wounds to perfect any antiseptic. We had gone along using the more or less inefficient remedies of the past. With the enormous number of infections resulting from war wounds a great necessity for a more thorough antiseptic was felt. One with a great destructive power against bacteria but with no harmful effects on tissue. After many efforts Carrel and Dakin perfected this solution and technique. The appreciation of its value during the war is shown by extract from article by Surg. Gen. Merritte W. Ireland, in which he says:

"In 1914, operative surgery was entirely aseptic. But with the dirt and grime of trench warfare, over ground cultivated for centuries, and therefore swarming with pathogenic organisms, asepsis was no longer possible and the revival of the antiseptic surgery of Lister was almost a foregone conclusion. As described by Crile:

" 'The early states of wound treatmen on the western front were haphazard and experimental, a matter of dispute between "the claims of the value of various chemical agents against those of no chemical agent, of moist dressings against dry; of hot against cold; of frequent dressings against infrequent, and of no dressings against both; of sunlight and of electric light against occlusions; of immersion against hot air; of bacteriological control against clinical judgment; of vaccines, toxins and foreign proteins against normal reaction; of wound inoculation with harmless organisms against wound sterilization; of isotonic against hypertonic solutions; paste has competed with paste, bipp with ip; sap with both and chromic pastes will all."

"Out of all this controversy and welter of opinions, there was at last evolved one of the great surgical discoveries of the war, the application to wound treatment of the principle of disinfection by the release of a gas from a liquid solution. Of this method, the Carrel-Dakin, Finney xx says conclusively that 'it is one of the most important and far-reaching contributions of the war to the armamentarium of the surgeon.'

" 'Lister taught us, above all, how to prevent infection; Dakin and Carrel, following Lister's principles, have taught us how to conquer even rampant infection. For nearly half a century we surgeons have been fighting firmly intrenched infection, but always in vain. It required the stern stimulus of war to enable us to win the victory'."

Here he has quoted some of our most prominent surgeons; opinions that must carry weight. We always have infections from one cause or another and now we have a method with which we can control these so there is no need of our going back to the old methods of treatment. It has been the subject of a great deal of discussion both favorable and otherwise during the past few years, this of course, being true of any new procedure. You are quite familiar

(Read before the South Carolina Medical Association, April 20, 1921, Columbia, S. C.)

with it in print if not in practice and there is no need of my going into the detailed description of the solution.

The unfortunate part about the Carrel-Dakin solution and technique is that it is slightly complicated, both in manufacture and in application, making the opportunities for going wrong thereby losing all or part of the benefits of this method many. I have found that poor results due to incorrect use frequently laid at the door of the solution rather than that of the user, where they justly belong. A little attention to detail will make the seemingly very complicated method relatively easy.

It has been proven beyond any doubt that the claims held out for this solution are not false. However, we cannot expect the impossible, it cannot destroy bacteria it never reaches, therefore it is essential that the area to be treated be properly prepared. It is secondary to good surgery. Anyone using the solution in an infected field improperly prepared, hoping that it will take the place of careful and thorough surgery is doomed to disappointment. The primary step in the treatment of any infection is now as has always been; thorough drainage. After this comes the proper use of the solution. Every detail of this technique has been carefully and scientifically worked out by Carrel, and a careful adherence to these principles will surely bear fruit.

I am going to mention the most important points in the technique. First, a few of the "don'ts":

Don't use a solution made in a haphazard manner; there is a leeway of only .05 per cent in the strength, so its preparation must be accurate.

Don't use old solution, under the best circumstances it will last only 48 hours, much less when exposed to light and air.

Don't warm, don't use with alcohol, iodine or any other antiseptic. Then comes the problem of the tubes. Small tubes 5-16 inch in diameter with 3-16 inch lumen is a good size, with minute perforations. These tubes should be inserted so that the most remote corners of the infected area are thoroughly douched with the solution. It is wise in most cases not to pack gauze between the tube and the wound, for the meshes of the gauze soon become occluded. The instillations are made ever two hours during the day and night if the case is severe. Usually every two hours during the day and three times during the night is sufficient. The ends of the tubes are left out of the dressing so that the patient is not disturbed by the injections. Vaseline is smeared about the skin edges and adjacent creases so as to eliminate the erosive action it has on the skin. Usually it is more of an itching than actual pain that they complain of when the vaseline is neglected.

The field for the use of the solution is very wide. It can be used anywhere except in the eye, urinary tract, and abdomen; that is in the free cavity, here it causes great pain, shock, erosion and perforation of the omentum and in large quantities death. In the intra peritoneal abscess the tract of which is walled off there is no danger and the results are good. We have used this method in a great many different types of infection with very satisfactory results. In traumatic cases it is especially affective; in the majority it will abort infection if used within the first 24 hours. We have used it in compound fractures, G. S. W. cellulitis, rectal abscess, intra-peritoneal abscess, empyema and osteomyelitis. Quite a while back I made a series of bacteria counts which I will read. These are not selected cases.

Lowery: Infection of hand, necessitating amputation of mid-finger and incision of palm:

First day, 150* per field.
Third day, 48.
Sixth day, 20.

Tenth day, 3.

Boling: Infection of hand, mixed strepto and staphylococci:

First day, 180.

Third day, 80.

Seventh day, 20.

Tenth day, 2 to 3 fields.

Anderson: Compounds fracture of tibia:

First day, 5 per field. Compound fracture.

Second day, 0.

Derrick: Compound fracture of tibia:

Third day, 0.

Fourth day, 0.

Fifth day, 0.

Love: Compound fracture of tibia:

Second day, 0.

Third day, 5.

Fifth day, 3.

Sixth day, 0.

Seventh day, 0.

Williams: Excision of bubo; free pus:

Second day, 4.

Fourth day, 0.

Holiday: Excision of carbuncle:

Second day 400x.

Fifth day, 150.

Eighth day, 50.

Tenth day, 4.

There are fields in which this is a great deal more effectual than in others. We do not see the great number of wounds of the soft parts that we wish to sterilize and suture as during the war. We have found in our work that our best results have been in compound fractures, osteomyelitis and empyema. In the first it is of very material aid. Most of the compound fractures we see are dirty, frequently comminuted, sometimes several days old and already actively infected. Of course the earlier we get these the better our hopes of aborting infection. A. T. S. is always given. Thorough debridement is done and the part is put at rest on splint that will allow easy access for dressing. The wound is then made steril with Dakin's and if applicable, limb is put up in plaster and patient allowed to return home. During the past year or a little over we have treated in this manner six compound comminuted fractures, four of which involved one of the larger joints; two being the knee, with an average of two days of Dakin's; three compound fracture long bones; with average of five days. One compound fracture of pelvis associated with great trauma, Dakin's used 25 days.

Otts: Compounds comminuted G. S. fracture of tibia and fibula, 26 days.

Dunbar: C. C. G. S. fracture of ankle joint, 18 days.

Denning: C. C. G. S. fracture of wrist joint, 27 days.

Wise: C. G. S. fracture of knee joint, 15 days.

Sharp. C. C. G. S. fracture of knee joint, 15 days.

Butler: C. C. fracture of tibia and fibula, 25 days.

Total 126 days. Average 21 days.

Anderson: C, fracture tibia, 4 days.

Love: C. fracture tibia, 5 days.

Derrick: C. fracture tibia, 5 days.

Total, 14 days. Average, 5 days.

Middleton: C. fracture of pelvis, 25 days.

All of these left the hospital steril, one (Butler) returned later because of a piece of detached bone dying through lack of blood supply resulting in renewed infection.

In the treatment of osteomyelitis we have a condition that has always taxed the skill and patience of the surgeon. You have all seen cases that have drained for months, often for years. This is something that is not to be undertaken lightly. Here certainly you cannot hope for good results without good surgery. Clean out every particle of dead bone and then apply the solution. I have here the report of six cases dating from a few days to a year. The average time for the use of the solution being 18 days.

Another case of osteomyelitis of the

tibia complicated by deep popliteal abscess and infection of the knee joint went home at the end of 27 days of the solution still draining.

Phillips: Osteomyelitis of femur, 27 days.

Rutherford: Osteomyelitis of fibula, 7 days.

Butler: Osteomyelitis of tibia, 10 days.

Clayton: Osteomyelitis of humerus, 21 days.

Willis: Osteomyelitis of tibia, 15 days.

Roundtree: Osteomyelitis of os calcis, 28 days.

Total, 108 days. Average, 18 days.

Empyema is very promising. We are using a method that in many cases is superior to rib resection. That is by inserting rubber tube through chest well through cannula and then withdrawing cannula. The advantage is that there is little or no shock, no loss of blood, the patient can be kept dry, the lung does not collapse and there is no danger of a discharging sinus left. By means of a bottle and siphon we keep up a constant suction in the pleura; not great but sufficient to remove all secretion as formed. Through this tube the pleural cavity is flushed out ever two hours during the day, and three times at night. Each time after injection the flow is stopped for one-half hour and the solution allowed to remain in chest. Once a day the solution is injected and withdrawn until the return is clear. Three cases with average of 18 days.

Corley, 20 days.

Clark, 14 days.

Taylor, 21 days.

Total, 55 days. Average, 18 days.

We used this solution on numerous other cases of soft parts with equally good results. These I will not attempt to mention.

The treatment of infection is by no means a closed book, but for the present I firmly believe that this method of treatment is superior. You see by the above records that we have lessened the stay of patients in the hospital considerably, morbidity is shortened, expense and suffering are minimized and an early and permanent return to active function is practically assured.

Discussion of Dr. Boling's paper:

Dr. W. A. Boyd, Columbia: I agree with Dr. Boling that the use of the Carrel-Dakin solution is not to be taken as a means of avoiding efficient surgery. He is absolutely correct there. At all times the surgeon should see to it that even his dirty cases have been given the very best surgical technique and preparation before using the Dakin solution.

I have been using the solution for the past year and a half in quite a number of cases of osteomyelitis, also in compound fracture of the tibia, and in the treatment of empyemas following the epidemic of influenza. It is remarkable how these dirty cases of osteomyelitis begin to clear up and your granulations take on a good healthy look and growth under the drenching of Carrel-Dakin solution, and before long you find the wound is free of infection and the skin wound closing over. In a case of compound fracture of the leg seen three or four hours after the accident, I would not hesitate to do a good clean piece of surgery, removing all the crushed tissue, washing the ends of the fractured bone, irrigating the wound carefully with Carrel-Dakin solution, and then closing the wound, without any trouble and with a perfect result expected. In an osteomyelitic case it is necessary that the bone be properly prepared. The bone must be so shaped that all portions will be douched by the solution. Occasionally it is impossible to so prepare the bone without destroying it. I had a little girl of five with an osteomyelitic tibia of some eight weeks duration involving almost all the knee joint. I

exposed the tibia down to about the lower four inches and removed the various sequestrae, and found the head of the tibia was also badly involved. The child's leg was held in absolute flexion and I did not deem it good surgery to straighten it out. Under an anaesthetic I did bring the limb down probably fifteen degrees; we were not able to keep it constantly douched with Dakin's solution, so in that case I made use of gauze, packing the wound lightly under the patella and head of the tibia, and then every two hours spraying it with the Dakin solution. I am happy to say that we have been able to bring the leg down and that it is practically healed, although there is a small area close to the knee joint that is still open; but the infection has been practically eliminated. Personally, I am very favorably inclined to use of Carrel-Dakin solution in septic bone cases.

CASE REPORT

By James S. Fouche, M. D., Columbia, S. C.

Mr. B. R., a young man 27 years of age, married, occupation barber, came to my office one morning and requested that I give him something for pain in his stomach. He stated that he had been suffering from "stomach trouble" for the past three years, and that during this time he had consulted three physicians who had told him he had Gastric Ulcer and had treated him for same, but he had gotten no better, in fact worse. On asking him the character and time of pain he described it as being practically typical of ulcer. At this point it was up to me to decide whether my patient was really a sick man seeking relief or a drug addict, and an expert in fooling doctors into giving him dope. For at this time he was complaining of considerable pain in the epigastrium. Well, I decided on the former and my belief was here strengthened by him asking me for a drink of water, stating that a swallow would relieve his pain somewhat. I asked him if he was willing to undergo an examination that we might make or try to make a correct diagnosis on him. He said he would go as far as his money would last.

(Read before the Columbia Medical Society, August, 1921.)

His past history was of no importance except that five years ago he had an operation at Greenwood for a ruptured appendix. And had suffered some from indigestion and constipation ever since he had been grown. He comes now seeking relief for pain in the epigastrium and says that besides an occasional frontal headache that he has no pain in any other part of the body.

General Examination.

General appearance shows the patient to be poorly nourished, pale color and an anxious facial expression. Patient says is about twenty pounds off his normal weight. Skin and joints normal. Appendix scar, no pain and tenderness about same. Pupils equal and react normally. Teeth generally are in good condition, the throat somewhat red and congested. Tonsils are markedly hypertrophied and infected. Thyroids normal. The lungs negative except for a few moist rales heard at the lower border of each. Heart regular in action, no murmurs heard, apex fifth inner space inside nipple line. Pulse 78. Blood pressure 130 systolic, 94 diastolic. Pressure over the epigastrium revealed marked tenderness but no rigidity, there was also tenderness over the left costo-vertebral angle. Out of the above examination we get tenderness over the epigastrium, and at the left costo-vertebral angle, large infected tonsils, and pale poorly nourished patient. Temperature 98.

Laboratory Findings.

Urine: Very cloudy, specific gravity 1032, albumen positive, no sugar, many hyaline granular casts, many pus cells, also blood cells.

Stool: Stool negative for parasite ova and occult blood.

Blood: Total leucocyte count 11,300 hemaglobin 85 per cent. Total red cell count 4,000,000. Wassermann test negative.

X-ray: Urinary tract: Right kidney, negative. Left kidney, there is a large irregular shadow in the upper part of the kidney connected by an isthmus with a smaller mass that corresponds to the pelvis of the kidney; the lower calyx of the kidney is apparently filled with same opaque matter. There are two rather round opaque masses to the outer side, and evidently in the substance of the kidney. There is no shadow along the course of the left ureter, but the bismuth catheter stops at the sacral angle.

Urological Examination: Made by Dr. Wyman at Columbia Hospital, reported the following:

Total urinalysis showed the same as that above stated. Total phthalein was 40 per cent.

Cystoscopic Examination: Bladder inflammed about left ureter orifice; both ureters catheterized. Urine from left showed many blood and pus cells. Right kidney also showed a few pus cells, Differential phthalein: Right kidney 40 per cent; left kidney 0.

It will be noted that the right kidney's 40 per cent function equals the total function; thus proving the left kidney not functioning.

Remarks: With the above findings we felt that it was unnecessary to put the patient to the expense of having the gastro intestinal tract X-rayed or an analysis of the gastric contents. The pathology already brought out to my mind being sufficient to explain patient's complaints. The out standing feature of this case is the absence of symptoms referable to the kidney as his only complaint was of epigastrium pains. This again being one of those many cases in which the symptoms are referable to the stomach and the pathology being entirely in a distant organ. In this case being in an organ which is extra-peritoneal.

Diagnosis: Infected Renal Calculi Left Kidney. Infected Tonsils.

Treatment: The patient was referred to a general surgeon for a nephrectomy, which was done at the Columbia Hospital by Dr. Bunch, after which he had anuneventful recovery from the operation, leaving the hospital three weeks after same.

Results: Two months later the patient reported back, at which time he had gained considerably in weight and stated that his pain in the epigastrium was much better. However, it was still noticeable at times. Urinalysis at this time showed albumen and granular casts, very little pus and no blood. He was advised to have his tonsils removed, which he did. Four months later patient was seen again, his weight was more than it had ever been, the urine was negative, and the patient stated that he was having no pain and enjoying the best of health.

Conclusion: This case well illustrates the importance and necessity of more thorough examinations and laboratory work for evidently a diagnosis of Gastric Ulcer had been made upon this patient entirely from his history when as a matter of fact a careful urinalysis led to a correct diagnosis.

OBSERVATIONS ON THE ETIOLOGY AND TREATMENT OF ENTEROPTOSIS.

By D. E. Walker, M. D., Rock Hill, S. C.

Enteroptosis is almost wholly an affection of women, and, as a general rule, is accompanied with ptosis of other abdominal viscera. It occurs in two types, one of which we might call the relaxed, the other, the neurotic type.

The condition in the first is associated with extreme relaxation of the abdominal wall, following repeated pregnancies, recurrent ascites, or marked loss of flesh, and often involves separation of the recti muscles. This type is frequently characterized by the entire absence of subjective symptoms.

The second type presents the same conditions in less marked degree, but is associated with well defined neurasthenia in its various forms. It occurs usually in thin, ill-nourished, constipated, poorly developed young women.

The first type "is one mainly of outward signs, the second, one of subjective symptoms."

The malady is mechanical in origin, and I would place as the chief factors in the etiology of most of the first type, repeated pregnancies plus constipation; and in the second type, imperfect physical development, plus faulty dress and habits, with constipation, during childhood.

While I lack statistics, I am satisfied that the majority of cases of the first type are due to relaxed abdominal walls following repeated pregnancies, together with a loaded state of the bowels from which most women suffer. As contributory causes may be cited poor physical development, and the weakening effect that continuous use of the corset has on the abdominal muscles. From relaxation and stretching of the abdominal wall, the effect of intra-abdominal pressure is lost, and the mesenteric vessels become engorged with blood, so that there is a constant downward pull on the intestinal attachments —gradually weakening and stretching them until there is a well marked ptosis of the stomach and bowels.

Enteroptosis, in the second or neurotic type, I am convinced has its prime cause in faulty habits and living conditions during the period of growth and transition from girlhood to womanhood. My experience with negroes is meager, but I have yet to see a case of enteroptosis of this type in a negro woman, and I venture to say that few, if any, are found. It is not implied that their habits or living conditions are superior to those of the whites, but in certain respects they markedly differ, and one or two of these differences constitute a great advantage in physical development, upon which depends the strength of the enteric supports. I refer to the largely untrammeled bodies of negro girls, allowing them the same chance for muscular development that is enjoyed by boys, and to the greater amount of physical exercise they habitually get. There is also the added fact that their education is not pushed forward at the expense of physical growth as is often the case with whites. With the negro girl the corset is an occasional article of wear, but with the white girl it is, after a certain age, a constant companion. Entering also as a factor is the tendency of the white mother to discourage and suppress the tom-boy element in her daughter——an element that has much to do with all around physical development and strength of body.

After all, enteroptosis in these neurotic cases is simply muscular weakness and relaxation manifesting themselves in a markedly local manner, and accompanied with all kinds of neurasthenic symptoms.

(Read before the York County Medical Society, July 17, 1921.)

Treatment of the malady naturally falls under two heads—preventative and curative—and, in my opinion, prevention is not only the more important, but by far the more effective.

Every pregnant woman should have some oily preparation rubbed regularly into the whole abdominal parietes at least every other day after the abdomen begins to enlarge, and this should be continued until after delivery. This is particularly important in primiparae, for not only does it aid the circulation; but it keeps the muscles and skin in good condition, allowing them to stretch easily. It also prevents those unsightly scars in the true skin that one so often sees after delivery, and aids in the return of the abdominal walls to normal condition.

In the latter months of pregnancy some form of abdominal supporter should be worn to aid in sustaining the weight of the pregnant uterus, and to give comfort to the patient. This supporter need not be expensive. Any woman who is skillful with her needle should be able to fashion one to answer the purpose from unbleached muslin, stiffened if necessary, with whale bone or some similar material. This should be adjusted while reclining, and worn constantly during the day or while on her feet. She should have regular, but not excessive exercise, and the bowels should not be allowed to become constipated.

Following delivery an abdominal binder should be applied in such a manner as to support the abdomen—pressing its contents upward instead of downward—after the manner of the so-called "straight front" corset: and this, or some similar article, should be worn until the abdomen has resumed its normal contour. I am satisfied that many of these cases occur because the use of the abdominal binder after delivery has been almost entirely abandoned.

Finally, one should not dismiss his case until he has seen that involution is progressing properly, or has been completed.

In the prevention of the second, or neurotic type, some advance, I believe, has already been made in the fact that regular physical exercise is now a part of the curriculum in many of our schools. This curriculum should apply to girls as well as boys, and moreover their clothing should be of such pattern as to allow free bodily movement. Education of our girls should not be pushed forward at the expense of physical development. The aim should be a sound body, for what use is an education if it must be gained by the loss of health?

I have noticed that some deaf-mute girls, who had absolutely no schooling until over fifteen years of age, learned with remarkable rapidity all the book knowledge that their more fortunate brothers and sisters had been acquiring from earliest school age. From this I feel that we lay too much stress on mental, and too little on physical training, especially in our girls. Lack of proper exercise is probably at the root of the constipation with which most women are afflicted, and constipation enters largely into the cause in these neurotic cases.

I would say then, that in these cases prevention is not only better than cure, but is practically the whole matter.

Now what can be said of the curative treatment of enteroptosis? The affection being mechanical in origin, one would expect surgery to answer that question; but so far surgery has failed. We must perforce resort to means that are mechanical in aim. If one is overtaxed the first indication is relief from the load that taxes, and the second is renewal of strength that bears the load. We must get relief from the weight that is dragging the abdominal contents down. Therefore unload the bowels

with some form of saline, or hydragogue cathartic, and thus relieve the engorgement of the mesenteric vessels. Keep the patient in bed from one to two weeks according to the severity of the case, having the foot of the bed somewhat elevated, and massaging the abdomen every day.

Then a supporter should be applied. The best temporary supporter seems to be that devised by Dr. Achilles Rose, and is made of heavy adhesive plaster—zinc oxide on moleskin. This is made about seven inches wide, and long enough to meet around the waist.

This should be applied with patient in the dorsal position—hips elevated—after shaving off the abdominal and pubic hair. The shape of this bandage allows it to fit over the hypogastrium, and curve just above the hips. It is also reinforced in front over the hypogastrium where most pressure is needed, and may, if necessary, be additionally stiffened with more layers of plaster. If fitted and applied properly, this bandage will support the weakened abdominal wall, and the abdominal contents sufficiently to permit the parts to regain their strength, and what for a better name, may be called their "tonicity." This bandage should be worn from three to four weeks unless it irritates or loosens sooner. Then it must be removed, a full bath given, any residue cleaned off, talcum powder applied, and after twenty-four hours, a new bandage put on. The bandage should be repeated and worn for several months, or until the object is attained.

The points of the bandage may be cut off where it joins the os pubis, and a small piece of gauze or cotton must be placed over the umbilicus to prevent irritation.

In addition to these local measures, general tonics must be used to increase nutrition, and the diet and exercise must be regulated with the same end in view.

Such exercises must be prescribed as will strengthen and develop the abdominal muscles, such as bringing the body from a supine to an erect position, the legs being kept stationary; or any other movements that will bring the abdominal muscles into play.

Neurasthenic symptoms must be met as they occur, with sedatives when necessary, never using narcotics except when absolutely unavoidable.

Last but not least, the bowels must move daily, preferably regulated by diet and habit, and the judicious use of exercise and abdominal massage. These must be supplemented when required with such remedies as mineral oil with cascara or podophyllin in regular daily doses as needed; and better results will be obtained if these medicines are given immediately after supper instead of at bedtime.

INJURIES TO THE SPINAL CORD; A PLEA FOR EARLY OPERATION.

By G. T. Tyler, M. D., Greenville, S. C.

Injuries to the spinal cord are most frequently secondary to those of the spinal column in which it lies. The cord in the cervical and lumbar regions has greater mobility because the canal in these areas is larger in proportion to the size of the cord than in the dorsal spine. Hence it requires less damage to, or displacement of, the dorsal vertebrae to injure this portion of the cord. The transverse area of cord injured being the same, the higher the location, the graver the outlook, cervical injuries outweighing in gravity those in the dorsal area in the proportion of two to one; in the lumbar region, of four to one; a statement easily explained when we appreciate that the higher segments include all the nerve fibres distributed to the lower ones.

(Read before the South Carolina Medical Association, April 20, 1921, Columbia, S. C.)

In the lumbar region of the spine, lies the cauda equina, beginning about the first lumbar vertebra. The nerve bundles making up the cauda are really peripheral nerves, although they lie for several inches in the spinal canal. Peripheral nerve injury is not attended with the grave consequences of cord injury. Suture of these—caudal—nerves also has resulted in recovery; while suture of the divided cord has not resulted in the relief of symptoms.

In determining the location of any injury to the spinal cord, we must bear in mind a few terms the understanding of which will make this field of diagnosis easier: the upper and the lower motor segments, reflex arc, the upper limit of sensory disturbance, absence or alteration of deep and superficial reflexes. Reaching the upper limit of these sensory disturbances, and referring them to their proper segments determines the location in the cord of the injury. It must be remembered, too, that segment does not correspond with vertebra, the rule being that the lower cervical segments are one, the upper dorsal two, the lower dorsel three, spines above the corresponding spinous process. The fifth lumbar segment lies opposite the twelfth dorsal spine. X-ray examinations also are necessary to locate fractures, dislocations, foreign bodies, and abnormal growths. Anteroposterior, lateral, and stereoscopic views will many times give valuable information; but the most important measure in diagnosis is the plotting of the areas of sensory and reflex changes.

Spinal cord injuries are followed by the largest morbidity, if not the largest mortality, of all severe wounds. Fracture, dislocation, or both, foreign bodies, stab wounds, contusions, and concussions; these are the most frequent causes of acute injury. Syphilis, tuberculosis, new growths, erosions, are responsible for more slowly progressive symptoms, evidenced by pain, alteration of sensations and reflexes. All these mean that pressure is being exerted upon the cord or the spinal nerves.

A review of the literature on surgery of the spinal cord leads one to the belief that there has been little improvement in the results obtained in acute conditions from operative treatment within the last ten years. The mortality following operation is high; and owing to the poor results, delay has been the rule; this because recovery sometimes has occurred without operation; hence the willingness to wait until whatever improvement is to occur has taken place. Complete transverse lesion of the cord is hopeless. There is complete paralysis, motor and sensory, below the level of injury; the reflexes are abolished; bladder and rectal control are lost. If recovery to any degree takes place in a short time, operation may be undertaken in the hope of relieving pressure on the cord. When there is partial paralysis, operation should be undertaken immediately. The question arises: how can it be determined immediately upon injury whether the lesion is a complete transverse one? And since it cannot be so determined, what shall the course of treatment be? There is good authority for whatever course is followed, immediate or delayed operation, or no operation at all. Sir Wm. Thorburn, writing in Oxford Surgery, concludes that in fracture-dislocation operation is useless in the great majority of cases. Jacobson is opposed to any operation. Sir Victor Horsley's advice was: If the injury is acute and in the cervical region, wait; if in the dorsal region, wait a little; if in the lumbar region, I do not think you want to wait to operate. Also in 1890 he wrote: Trephining the spine for injury is an operation of very slight danger, intended to relieve a hopeless condition, and the chance of its doing any good, although very slight, is sufficient to render it a correct practice

Murphy taught that when there is, immediately after injury, evidence of complete transverse lesion, operation is useless. Frazier, on the other hand, advises early operation. So does McCosh, before secondary degeneration has occurred. Monroe, in thirty cases of upper dorsal and cervical injury, had three complete recoveries. Burrell in 1915 wrote that "it is impossible to state in many cases the extent of cord injury except by open operation; that unless it is perfectly clear that injury is irreparable, operation is indicated." Up to the present time it is almost impossible to recognize immediately upon the receipt of injury, the extent of damage. If operation is to accomplish anything, it must be undertaken within the first few hours. Otherwise it will avail little.

Probably the class of patient from which the greatest improvement is to be expected is that in whom contusion or concussion has occurred. There is hemorrhage into the cord as well as around it. In such cases the experimental work of Allen is very suggestive. He produced cord injury in animals by dropping weights on the exposed cord. Two hours later he opened the dura, found hemorrhage in the arachnoid and beneath it. He incised the cord also, found hemorrhage in its substance, which blood was allowed to escape. Animals so treated recovered after some months, while control animals remained permanently paralyzed. The rapid disintegration of the cord substance which occurs after such injuries makes early interference mandatory if it is to anticipate permanent damage. In the absence of more definite diagnostic measures, early operation means exploratory laminectomy. That acceptance of this view is not general is the opinion of Frazier, who thinks that exploratory laminectomy is where exploratory laparotomy was twenty years ago.

On behalf of those who advise early operation, it can be said that laminectomy is an operation that does not incur great risk. If the patient dies, he would have died without operation. Early removal of blood from around and within the cord prevents disintegration of the injured nerves, for these being without neurilemma do not regenerate. On behalf of those who would delay, it can be said that some patients recover without operation (I wonder what the extent of the recovery is); that we have no means of recognizing clinically hemorrhage into the cord at the time when operation will do good; that there is added risk to what injury the patient has already received; that if the patient survives the injury he is lucky no matter what the extent of his disability. I would remind those holding this view that it is only by radical measures that patients previously regarded as hopeless have been relieved. What was the attitude of the medical profession twenty years ago toward appendicitis? Our attitude has changed regarding cancer; also regarding fractures, especially in elderly patients. Since we can do little harm by early interference, I would urge a more hopeful attitude toward these cases, an energetic effort to explore as early as possible, reminding you that early exploratory laminectomy has slight risk, causes little if any disability, and may prevent irreparable damage to the spinal tissues.

Case reports I.—J. J., male aged 18, accidentally shot in the right chest, the bullet lodging beneath the skin between the tenth and the eleventh ribs on the left side. I saw this patient two weeks after injury. There was complete motor and sensory paralysis from the waist down. Bladder and sphincter control were lost; reflexes were abolished. There was blood in the chest, which was removed. A diagnosis of complete transverse lesion of the cord was made. No operation was done. The patient died soon after leaving the hospital.

Case II.—G. H., male, aged 33, was shot in the back, the ball entering about the inner border of the right scapula, and lodging against the lamina of the fifth (?) dorsal vertebra. There was paralysis of the right leg, retention of urine. Lumbar puncture done the day of injury brought clear spinal fluid. Enough was removed to drain the area wounded. The following morning the left leg also was partially paralyzed. X-ray pictures, antero-posterior and transverse, located the bullet, which was removed less than twenty-four hours after injury. As there was no evidence that the dura had been injured, it was not opened. The patient regained bladder and sphincter within ten days after operation, and is able to walk with the aid of a cane. He had injured his right knee and ankle prior to the cord injury. The spinal fluid Wassermann also was ++++. After recovery, he would not continue specific treatment. I think the dura should have been opened in this case. Recovery was fairly satisfactory, but it might have been better. My reason for not opening it was the clear spinal fluid obtained by lumbar puncture.

Case III.—C. J., aged 27, fell from a low roof—4 feet—eleven months ago. He landed in a sitting position. Though stunned, he felt no ill effects from the fall. Four months later while carrying a beam with another laborer, the other man dropped his end, the jar wrenching the patient's back. Pain at first, soon passed off; but a month afterwards he began to complain of pain and increasing weakness in back and legs. He grew constipated, had difficulty in voiding, had lessening control of bladder and rectum; and was confined to bed the greater part of the time. He was unable to walk or to stand on either foot. Examination seven months after second injury was negative except in lower back and legs. There was motor paralysis of both hamstring muscles, and of the legs below the knees. Left knee jerk absent. Cremaster absent. No response to planter stimulation. Sensations only slightly disturbed except for a saddle-shaped area of anesthesia around anus, perineum, and over the inner side of the thighs. X-ray examination revealed a fracture of left lamina of fifth lumbar vertebra, with a dislocation of the lower lumbar vertebra on the sacrum. Operation, laminectomy, revealed a dense band of tissue between the third and fourth lumbar vertebrae, lying outside the dura, and compressing the cord. This cut like cartilege. A more delicate band lay about the junction of the fifth lumbar and the first vertebrae. It caused no pressure; but was also removed. On opening the dura, I noted a jelly-like material in the canal below the site of the constricting band. The bundles of the cauda were paler than usual; but nothing else abnormal was found. The patient eventually regained bladder and rectal control and sexual power; the pains in the back disappeared. He has recovered much use of his right thigh; but there is no improvement in his legs. I believe he could walk with the aid of crutches, using a brace to support the foot. It is now sixteen months since he was operated upon. Had he been treated the onset of his symptoms, he would very likely have had complete recovery.

URETERAL STRICTURE

By T. M. Davis, M. D., Greenville, S. C.

It has long been recognized that stone in the upper urinary tracts may give rise to symptoms which make it necessary to consider every other abdominal organ in arriving at a diagnosis.

Only within the last six years have we begun to appreciate that ureteral stric-

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ture may give rise to precisely the same symptoms and signs as ureteral or renal calculous and that stricture and its sequelae must, therefore, be considered in attempting to diagnose the cause of obscure abdominal pain.

Ureteral stricture is one of the commonest causes of abdominal pain in women and to a somewhat lesser extent in men. Unrecognized ureteral stricture leads to more needless and fruitless abdominal operations than any other pathologic condition. These operations in the probable order of frequency are for appendicitis, ovarian disease, uterine and pelvic disorders, floating kidney, especially the type with hydronephrosis, gall bladder investigations, abdominal explorations for adhesion and intestinal obstruction, and ureteral calculous.

In addition to the operations, we have prolonged rest cures for gastro-intestinal and other abdominal symptoms, treatment for sacral joint troubles and for siatica.

On the other hand, in dealing with a disease that has such protean symptoms as to call for such a variety of useless treatments, and particularly in dealing with a condition that occurs so frequently, if we are not constantly on our guard, we may persist in treating a ureteral stricture after the symptoms due to it have subsided and neglect to remove a diseased appendix or gall stones.

According to Hunner ureteral stricture is the cause of more kidney pathology (excluding those conditions usually classified as medical) than any other one factor. It accounts for the majority of the hydronephrosis cases, and thus indirectly for many cases of movable or floating kidney and of pyonephrosis. Most pyelitis cases have stricture and obstruction as a basis, especially is this true of pyelitis of pregnancy and the puerperium. Some cases of albuminuria and eclampsia leading to premature child birth are due to stricture. Many cases of stone in the ureter and probably many cases of stone found in the kidney and bladder arise in an area of ureteral stricture. It is probable that urinary stasis due to stricture is the predisposing factor in many cases of stone arising in the kidney and of recurring kidney stone after operation.

Etiology:—Up until the last few years most of the literature has been devoted to the so-called congenital stricture of the ureter, Kelley thinks that strictures are caused by the commoner pyogenic organisms, the gonococcus and the tubercle bacillus, he also states that the commonest is due to the tubercle bacillus and then the gonococcus. Kelley and Burnham state that traumatic strictures of the vesical end of the ureter following the injuries of labor and surgical operations, especially the Wertheim operation for cancer of the cervixuteri, is quite common.

Garceau thinks that the gonococcus is the chief cause of fibrous stricture.

Gunshot and stab wounds are rare, severe traumatic injury is rarely the cause of stricture.

Endocervicitis is a likely source for many of these strictures as a vast majority occur in the broad ligament region, in men prostatitis is often associated in the male, so may be the causative foci.

Syphilis as a causative agent should always be kept in mind. Ureteral stricture occurs more frequently in women than in men and some are inclined to attribute this to infections of child birth but as a considerable proportion of the stricture symptoms begin in women who are not married and have never borne children, and are not infected with gonorrhoea.

Hunner states that he is convinced that the majority of ureteral strictures, excluding those of tuberculous origin, should be classified as simple chronic

stricture and that they have their origin in infection carried to the ureter walls from some distant focus of infection such as diseased tonsils, sinuses, teeth, gastro-intestinal tract and prostatis. In the majority of my cases they have either suffered repeatedly from tonsilitis or had them removed, others have had some other oral or nasal trouble.

Symptoms: Pain though rarely absent, is the most constant symptom of uteral stricture and may be anywhere from the diaphragm to the feet, although the commonest site of stricture is in the broad ligament area in women and the lower third of the ureter in males, it is rare for the patient to direct attention to the localized area, but usually complains of pains in the kidney, appendix region, posterior urethra, testicles or of bladder symptoms, or of both. Frequently it may be elicited that the patient has a nagging discomfort at the site of the stricture and this discomfort the pain may radiate in any direction, upward to the kidney laterally into the hips or groin, posteriorly, simulating sacroilliac joint disease or downward into the thighs either anteriorly or posteriorly.

Early in the patient's history the attacks of pain may be intermittent and in women at the menstrual period or after some unusual exposure as getting the feet wet (the majority of the cases I have had in women have been relieved of the persistent dysmenorrhoea they have been suffering from, following the dilitation of the strictures). Actual pain in the bladder when present is usually referred from the kidney or ureter, but many cases have bladder discomfort with frequency simulating cystitis.

Urine: In the simple stricture cases the urine is negative to pus, blood or organisms, but in cases associated with pyelitis there will be more or less leucocytes, maybe red blood cells and bacteria.

Fever: A patient with infection may go months without chills or appreciable fever and in apparent perfect health or suffer from slight malaise, but when some condition causes swelling of the stricture area there will be severe or mild rigors and usually high fever, it is important to note that a patient may develop a high fever with no infection and with only one ureter involved.

Gastrointestinal symptoms: are common, they are probably of two-fold origin, either as a central nervous system reflex or as a result of urinary absorption (as in renal colic due to calculous).

The symptoms vary from slight nausea or aversion to food to the most extreme nausea and vomiting. (Hunner thinks that many cases of pernicious vomiting of pregnancy is due to this cause and has relieved quite a number of cases upon dilating their strictures). Gaseous distension is common, rectal tenesmus and frequent desire for stool, mucous colitis is frequently caused or is relieved when a stricture when present is dilated.

Location : Strictures are located in the lower third of the ureter in the majority of the cases, being mostly in the broad ligament region in women and about three to six cm. from the bladder in males, the next most common site is at the bifurcation of the illiacs vessels, the next most common site is the uretero pelvic juncture.

The effects of stricture on the upper urological organs may cause a slight dilitation or there may be a large hydronephrosis, the degree of dilitation depends upon the patency of the stricture lumen, in some the stricture may cause an irritable condition of the pelvis and there will be a contracted pelvis, often these are the result of a chronic nephritis.

Stones often form at the site of these

strictures and Hunner thinks that many of the stones found in the kidney pelvis are retrograde, having caused dilation of the ureter above sufficiently to pass up into the pelvis (when the patient is in the dorsal position).

Effects Upon Pregnancy: As has been previously stated, many cases of the toxemias of pregnancy are relieved following dilitation of strictures (of course I am aware that the same is claimed for even the slightest endocervical manipulation in many cases, as the strictures have been dilated after the failure of these other manipulations it is only reasonable to credit more than the physic effect). Hunner has had many of the nephritic pregnancies to recover and progress normally to term after the stricture dilitation, he thinks, and reasonably so, that the back pressure causes a nephritis or rather kidney impairment which is relieved by the relief of obstruction. Many pyelitis of pregnancy are those arising as a complication to a pre-existing stricture.

Diagnosis: The diagnosis of ureteral stricture depends upon the history, urinary examination, palpation of the abdomen with special reference to the kidney and ureter regions, palpation of the ureter through the vagina or rectum, cystoscopy, catherterization of the ureter by specially prepared catheters and Roentgenography.

Stricture should be suspected in cases of obscure abdominal symptoms particularly in the lower abdomen and accompanied by refered pains to the hips, thighs or kidneys. Tonsilitis, sinusitis, bad teeth are often elicited in the patient's history and many cases have had from one to many abdominal operations, without obtaining relief from symptoms, of course we cannot judge what past operations may have been necessary, as a stricture can be present with cases of appendicitis, gall stones, nephroptosis, uterine displacements, adhesions, pyosalpingitis, etc.

Urinary findings have undoubtedly been a source of error in many cases, for a patient with symptoms that suggest urinary trouble have had this excluded upon normal urinary findings, also is this true in cases that present symptoms of calculous have been excluded by negative X-ray findings when from 15 to 25 per cent of ureteral stones are missed by X-ray, this alone should call for an examination with waxed tipped catheter in all cases of suspected stone, with the facts that the unassisted X-ray will miss all ureteral strictures and that the urine may be normal, it is therefore our duty to have all questionable cases investigated with specially prepared catheters and perhaps by pyelography. Palpation often reveals tenderness in the kidney region and the kidney may be enlarged, in some cases, palpation of the ureter over the pelvic brim may elicit tenderness and a desire to void, the tenderness over this region has led to many useless operations for appendicitis. Hunner thinks that tenderness internal to McBurney's point indicates ureter pain and that external is appendix.

Cystoscopy is usually negative, but in some cases with stricture near the bladder there may be hyperaemia and some oedema of that ureteral orifice as is sometimes found in cases of ureteral calculous, uretheral stricture is often found in females when preparing for cystoscopy, but I have not as yet found a stricture in male urethra in cases with ureteral stricture, although I have found prostatitis often in these cases.

Diagnosis: The diagnosis of ureteral stricture is definitely made by what is called the catheter test, this is made by the hang of the wax bulb of the catheter as it is withdrawn and the scar tissue grating as the bulb is drawn through the stricture and the jump as it passes the stricture, in some cases there is obstruction to the entrance of the catheter and it may be impossible

to get the catheter or bulb above the stricture; in these cases it will be necessary to resort to the use of opaque fluids, injecting them through a whistle tip catheter which has been passed up to the obstructing point and in this way obtain a fairly good pyelo-urterogram. This method will also differentiate a kink in the ureter, it must be remembered that a large size catheter will pass by a stricture without obstruction, and any case that has a severe reaction to simple ureteral catheterization should be tested for stricture.

Differential Diagnosis: I will only enumerate the conditions that may be mistaken for stricture as they can easily be differentiated by the above mentioned procedures, cystitis, pyelitis, pyonephrosis, hydronephrosis, floating kidney, ureteral calculous, chronic brights disease, pelvic inflammatory disease, ovarian disease, dysmenorrhoea, chronic peritonitis, intestinal adhesions, appendicitis, sigmoid adhesions, colitis, gall stone disease, sacroilliac, disease, pelvic plexus neuralgia, sciatica, neurasthenia, vera montanitis, tubercular, spine, etc.

Treatment: The chief end sought is the relief of symptoms, and in infected cases a urine freed from infection, and in all cases such a thorough dilatation that there will be no recurrence.

In all cases the primary focus of infection should be sought and corrected if found.

The ideal treatment of stricture of the ureter is dilatation from the vesical approach, using specially prepared catheters and other mechanical dilators, using the Kelly cystoscope in females and an operating cystoscope in males.

The catheters used are prepared as follows: Bees wax may be used to prepare a bulb about 5 cm. from tip, this bulb for the first test is usually made about 4 m.m. in diameter, a wire stylet is inserted into the catheter to give sufficient resistance, the olive point is then tipped with wax and manipulated to give a slight corkscrew effect. This will often enable the catheter to engage more readily in the stricture lumen in the more difficult cases. The catheter with the bulb is passed through a Kelley cystoscope into the ureter and up to the renal pelvis, the wire stylet being withdrawn as the catheter is introduced. In some cases the first dilitation may only be made with a whale bone filliform and subsequently with a larger instrument.

I have not found it possible to pass these bees wax bulb catheters through an operating cystoscope, therefore I have devised a special catheter for use in male as well as female cases, by using sealing wax to prepare the bulb, as this is hard and is not cut off or distorted in its passage through the operative type of cystoscope, as does the bees wax bulb. These catheters are tipped with bees wax as previously described, as the sealing wax is not scratched by a stone. The catheter is first passed into the bladder, the cystoscope threaded over the catheter and then the wire stylet inserted into the catheter to give the required resistance. The catheter is then inserted into the ureter and passed to the renal pelvis as described before, the wire stylet being withdrawn as the catheter is passed.

Lately I have been dilating strictures of the ureter very satisfactorily with a flat end Bransford Lewis ureteral dilator. This instrument works nicely through any operating cystoscope, passing the dilator up to the site of the stricture, dilating and releasing, then withdrawing for a c.m, and again dilating, repeating this as often as necessary to cover the strictured area, the amount of dilation is easily governed by the amount of pressure used.

As has been stated, the diagnosis of stricture is made preferably by the hang of the wax bulb on its withdrawal and the scar tissue grating as

the bulb passes the stricture. Patients will complain that this causes a reproduction of their pain, but usually more severe, that this is the first time that anyone has located the exact pain.

It is advisable to examine only one side at a time, as in many cases the strictures are bilateral and the trauma produced may cause swelling of the stricture area and sometimes temporarily blocking of the ureter, which might be disastrous if both ureters become blocked and uraemia produced.

In the average case the strictures are dilated about every ten days. This apparently is the time required for the preceding trauma to subside. In some cases with very dense strictures this time will have to be greater, as more trauma is produced.

SOCIETY REPORTS

PROGRAM PUBLIC MEETING OCONEE COUNTY MEDICAL SOCIETY, WESTMINSTER BAPTIST CHURCH, NOV. 2, 1921.

Cancer Control Week, October 30th to November 5th.

Address—The Treatment of Cancer With Radium and the X-ray, Dr. Sam Orr Black, Spartanburg.

1. Present Day Conceptions as to the Cause of Cancer, Dr. E. C. Doyle, Seneca.

2. Recent Progress in the Study of Cancer, Dr. E. A. Hines, Seneca.

3. Present Methods of Dealing With Cancer, Dr. J. H. Johns, Westminster.

4. What Can be Reasonably Expected to be Accomplished in the Future, Dr. W. C. Mays, Fair Play.

5. What Progress is Being Made in Shortening the Interval Between the First Visit to the Physician and Radial Treatment, Dr. J. W. Bell, Walhalla.

Committee: Dr. E. A. Hines, chairman, Seneca; Dr. J. S. Stribling, Seneca; Dr. J. H. Johns, Westminster; Dr. J. W. Bell, Walhalla; Dr. W. C. Mays, Fair Play; Dr. W. C. Marett, Newry; Rev. I. E. Wallace, Seneca; Prof. J. P. Coates, Seneca; Mrs. J. H. Adams, Seneca; Mrs. W. P. Reid, Seneca.

This meeting is being held especially for the information of the public and it is expected that a large attendance will be present from all over the county.

President, Dr. F. T. Simpson, Westminster. Secretary, Dr. E. A. Hines, Seneca.

WILLIAMSBURG COUNTY

On Thursday evening, Sept. 1, 1921, there was a meeting in the interest of the reorganization of the Williamsburg County Medical Society held at the Kelley Sanitorium, Kingstree, S. C., with the following attendance: Invited: Drs. H. L. Shaw and T. R. Littlejohn, Sumter, S. C.; Dr. G. F. McInnes, Charleston, S. C.; D. P. Frierson and L. Roy Cates, pharmacists, and J. A. Cole, dentist, Kingstree, S. C. Prospective members: Drs. P. S. Thomas, Hemmingway, S. C.; W. G. Gamble, W. V. Brockington, E. T. Kelley, T. S. Hemmingway, T. C. Harper and B. M. Montgomery, Kingstree, S. C.

Drs. Shaw, Littlejohn, and McInnes each made instructive addresses pertaining to the organization and maintenance of a local medical society, after which Dr. Littlejohn acted as chairman of the meeting.

In the election of officers Dr. W. G. Gamble was made president; Dr. E. T. Kelley, vice president, and Dr. B. M. Montgomery, secretary-treasurer.

It was agreed that the society should

meet on the second Thursday evening in each month, and that the place of assembly, unless otherwise provided, should be the reception room of the Kelley Sanitorium at Kingstree, S. C.

This completing the business session, those present became the guests of Dr. E. T. Kelley at a sumptuous banquet served in the dining hall of the Sanitorium, which crowned with success an already eventful evening.

B. M. Montgomery,
Sec.-Treas.

LEXINGTON COUNTY

Dr. Dohn Calhoun Nicholson, 42 years of age, had a common school education and graduated in medicine at the Medical College of Baltimore. Postgraduate course at South Carolina Medical College, Polyclinic course in New York in 1912. He married Miss Ruth Boozer, daughter of Rev. C. P. Boozer, November 19, 1908. He was shot on the streets of Leesville, S. C., April 3. 1921, and died early in the morning of the following day. He served through the Spanish-American war in Company B, First S. C. Regiment. Was a native of Saluda county. Came to Leesville about ten years ago and practiced his profession in that town since. He was a beloved and popular physician and held in high esteem and respect in his town and surrounding country. He was a member of Lexington County and South Carolina Medical Associations.

NEWS ITEM

Among the South Carolina physicians registered for the Clinical Congress of the American College of Surgeons meeting October 24th to 28th are:

Dr. C. B. Earle, Greenville; Dr. Geo. Bunch, Columbia; Dr. E. W. Carpenter, Greenville; Dr. F. H. McLeod, Florence; Dr. L. O. Mauldin, Greenville; Dr. Chas. H. Fair, Greenville; Dr. H. R. Black, Spartanburg; Dr. A. E. Baker, Charleston; Dr. W. W. Fennell, Rock Hill.

FIFTH DISTRICT MEDICAL ASSOCIATION

The Fifth District Medical Association had a most delightful meeting in Winnsboro on the 20th of October. While the attendance was not as large as at some of the previous meetings those who were present feel that they were greatly benefitted by the splendid papers and the good fellowship.

The program, as will be seen, was varied and every branch of medicine was handled by a strong man with experience and training to back his statements.

The paper of Dr. Pressley was unique and was a literary gem.

The Fairfield doctors served a most elegant dinner and following this was a pleasant social hour. Dr. Rakestraw, who is gifted as a reader, rendered several humorous selections which were enjoyed immensely. Others who responded with sparkling speeches were Dr. Patton of Spartanburg, Drs. Pressley, Weston, Baker and Corbett, and also Hon. Wilson Hannahan and Rev. G. G. Mayes.

The officers of the association are Dr. W. R. Wallace, president; Dr. G. W. Poovey and Dr. W. M. Love, vice presidents, and Dr. G. A. Hennies, secretary and treasurer.

The following were the papers on the program:

Duodenal and Gastric Ulcer—Dr. A. E. Baker, Charleston, S. C.

What the Physician Should Read—Dr. E. W. Pressley, Greenville, S. C.

Principles of Feeding During the Second Year of Childhood—Dr. William Weston, Columbia, S. C.

Some Phases of the Work at the State Hospital of South Carolina—Dr. C. F. Williams, Columbia, S. C.

Diagnostic Significance of Certain

Chest Signs—Dr. J. D. McDowell, York, S. C.

Diseases of the Eye, Ear, Nose and Throat as Related to General Medicine —Dr. W. C. Twitty, Rock Hill, S. C.

The Management of a Hospital in a Small Town—Dr. J. W. Corbett, Camden, S. C.

BOOK REVIEWS

THE PRACTICAL MEDICINE SERIES—Comprising eight volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A. M., M. D., professor of physical diagnostics in the Northwestern University Medical School.

Volume II.—General Surgery.—Edited by Albert J. Ochsner, M. D., S. R. M. S., LL. D., F. A. C. S., Major, M. R. C., U. S. Army, Surgeon-in-chief Augustana and St. Mary's of Nazareth Hospitals; Professor of Surgery in the Medical Department of the State University of Illinois. Series 1921. Chicago: the Year Book Publishers, 304 South Dearborn street.

The Year Book on Surgery always represents a highly authoritative resume of the literature. Under the able editorialship of Dr. A. J. Ochsner, this book is no exception to the rule. There are 625 pages, many interesting illustrations, and the printing and binding satisfactory.

THE PRACTICAL MEDICINE SERIES.—Comprising eight volumes on the year's progress in medicine and surgery Under the general editorial charge of Charles L. Mix, A. M., M. D., Professor of Physical Diagnostics in the Northwestern University Medical School

Volume III.—The Eye, Ear, Nose and Throat. Edited by Casey A Wood, C. M., M. C., D. C. L.; Albert H Andrews, M. D.; George E Shambaugh, M. D. Series 1921. Chicago. The Year Book Publishers, 304 South Dearborn Street.

This is one of the excellent year books under the editorial management of Dr. C. A. Wood, Dr. A. H. Andrews and Dr G. E. Shambaugh There are many references to focal infections, lethargic encephalitis, systemic conditions, etc.

THE SURGICAL CLINICS OF NORTH AMERICA. August, 1921. Volume 1, No. 4. Chicago Number. Published bimonthly by W. B. Saunders Company, Philadelphia and London.

Among the best articles in this number are the following:

Clinic of Dr. Arthur Dean Bevan, Presbyterian Hospital: X-ray Burns, page 935. Two Cases Operated on Under Local Anaesthesia—One an Acute Appendicitis and the Other a Carcinoma of the Pyloric End of the Stomach, page 945. Two Cases of Mediastinal Tumor Which Proved to be Substernal Thyroid Enlargements, page 957.

Clinic of Drs. Albert J. Ochsner and John Nuzum, Augustana Hospital: Ligation of the Inferior Thyroid Artery and Vein According to the Method Introduced by Professor Dequervain. The Use of Local Anaesthesia in These Operations and in Thyroidectomy, page 981.

Clinic of Dr. Joseph D. DeLee, Chicago Lying-in Hospital: Acute Appendicitis in Pregnancy at Term, page 1,003.

Clinic of Drs. E. Wyllys and Edmund Andrews, St Luke's Hospital: Two Cases of Laminectomy in the Lumbar Region for Traumatic Paraplegia, page 1,185. Extraperitoneal Drainage of a Cholecystectomy Wound, page 1,197.

Clinic of Drs. Carl Beck and Verne S. Cabot, North Chicago Hospital. Lipoma Arborescens of Ankle-Joint, page 1,213. Partial Necrosis of Coccyx Due to Injury Two Years Prior to Operation, page 1,215. Biliary Fistula and Cholecystectomy, page 1,217. Plastoc Operation for Treatment of Large Empyema Cavity, 1,219. Postoperative Appendical Fecal Fistula, page 1,227.

THE MEDICAL CLINICS OF NORTH AMERICA. July, 1921. Published bimonthly by W. B. Saunders Company, Philadelphia and London.

Some of the most excellent articles in this number are the following:

Clinic of Arthur R Elliott, St. Luke's Hospital: Gallop Rythm, page 1.

Clinic of Dr. Milton M. Portis, St. Luke's Hospital: Esophageal Diverticulum, page 53. Syphilis of the Spine, page 59. Medical Management of Duodenal Ulcer, page 63.

Clinic of Dr. Julius H. Hess, Michael Reese Hospital (Sarah Morris Memorial Hospital for Children): Spasmophilia, page 67.

Clinic of Dr. Arthur F. Byfield, Cook County Hospital. Aids in Physical Diagnosis, page 143.

Clinic of Dr. Isaac A. Abt, Michael Reese Hospital (Sarah Morris Memorial Hospital for Children: Meningeal Hemorrhage of Newborn and Young Infants, page 215.

Clinic of Dr. Carey Culbertson, Presbyterian Hospital: The Use of the Endocrines in the Treatment of Certain Gynecologic Disorders, page 257.